



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Kathleen Clarke
Executive Director

Lowell P. Braxton
Division Director

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Salt Lake City, Utah 84114-5801
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April 4, 2000

Sidney K. Hullinger
McFarland and Hullinger
P.O. Box 238
Tooele, Utah 84074

Re: Initial Review of Notice of Intention to Commence Large Mining Operations, McFarland & Hullinger Company, SiO₂ #1-6 Mine, M/045/046, Tooele County, Utah

Dear Mr. Hullinger:

The Division has completed a review of your draft Notice of Intention to Commence Large Mining Operations for the SiO₂ #1-6 mine, located in Tooele County, Utah, which was received November 15, 1999. After reviewing the information, the Division has developed the following comments which will need to be addressed before we can grant tentative approval of your large mining Notice. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion. If possible, please provide your response to this review by May 15, 2000.

The Division will suspend further review of your large mining Notice until your response to this letter is received. If you have any questions regarding this review please contact me, Doug Jensen, Lynn Kunzler, or Tom Munson of the Minerals Staff. If you wish to arrange a meeting to sit down and discuss this review, please contact us at your earliest convenience. Thank you for your cooperation in completing this permitting action.

Sincerely,

D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb
Attachments: Technical review
cc: Cheryl Martinez, BLM (U-72294)
o:\review\m45-46.rvw

REVIEW OF NOTICE OF INTENTION TO COMMENCE LARGE MINING OPERATIONS

McFarland & Hullinger Company
SiO2 1-6 Mine
M/045/046

R647-4-104 - Operator's, Surface and Mineral Ownership

A map showing surface ownership of adjacent lands should be included. (DJ)

R647-4-105 - Maps, Drawings & Photographs

105.1 Topographic base map, boundaries, pre-act disturbance

A scaled topographic base map is needed for surety calculation purposes. Please provide a map scale of at least 1 inch = 500 feet (1 inch = 250 feet is preferred). (DJ)

105.3 Drawings or Cross Sections (slopes, roads, pads, etc.)

Typical cross-sections should be included to illustrate highwall configuration at the end of five years and at the end of the mine life. These are necessary for surety calculation purposes. (DJ)

R647-4-106 - Operation Plan

106.3 Estimated acreage disturbed, reclaimed, annually.

A plan should be included showing the estimated area to be disturbed annually for the first five years of production and life of mine. Also indicate any concurrent reclamation that is planned. (DJ)

106.5 Existing soil types, location, amount

The Amtoft Series Shallow is identified as the predominant soil type within the project area. The description of this soil includes a 9 inch thick, cobbly loam surface and a extremely cobbly loam subsoil, 10 to 14 inches thick. The NOI states that 6 inches of topsoil would be saved for reclamation. To supplement this soil description, please provide a lab analysis of the soil material to determine its suitability for reclamation and what, if any, amendments or fertilizers will be needed to assure reclamation success. The following parameters need to be included in the laboratory analysis: pH, texture, Ec (electrical conductivity), SAR (sodium absorption ratio), % OM (percent organic matter), CEC (cation exchange capacity), Total nitrogen, Nitrate nitrogen, Phosphorus (as P_2O_5) and Potassium (as K_2O). (LK)

106.6 Plan for protecting & redepositing soils

Please describe how topsoil stockpiles will be protected. At a minimum, they should be seeded with a quick-growing vegetative cover and a sign placed to identify the material as topsoil and that it is not to be disturbed. Other appropriate protective measures would be to construct a berm around the stockpile(s), and the application of mulch. (LK)

106.7 Existing vegetation - species and amount

A vegetation survey will need to be completed for the project area. This survey will need to identify the species that are present and an estimate of the percent ground cover. Please contact the Division prior to doing the survey so that the correct data is collected. (LK)

R647-4-107 - Operation Practices

107.1 Public safety & welfare

107.1.15 Constructing berms, fences, etc. above highwalls

Because this area is a popular area for off-road vehicles and recreationists, berms, fences, or other types of safety protection measures should be placed above pit highwalls that may be accessible to the public. (DJ)

107.5 Suitable soils removed & stored

This section cannot be fully evaluated until the soils analysis is submitted and reviewed (see R647-4-106.5). The proposed 6 inches of soil for stockpiling may or may not be appropriate. (LK)

107.6 Concurrent reclamation

Will there be areas that can be reclaimed concurrently with ongoing mining operations? If so, these areas need to be identified on the reclamation treatments map. (LK)

R647-4-110 - Reclamation Plan

110.2 Roads, highwalls, slopes, drainages, pits, etc., reclaimed

No mention has been made as to the proposed final slope of the highwall. If the overall highwall slope angle will exceed 45 degrees, then a variance request with appropriate justification will be required. (DJ)

110.5 Revegetation planting program

Please provide a revegetation plan that is expected to meet the revegetation/reclamation goals of the post mining land use of grazing and wildlife habitat. This plan needs to discuss topsoil redistribution, soil amendments and fertilizers that may be needed (this cannot be evaluated until the soil analysis is submitted as per R647-4-106.5), seedbed preparation, seed mix (include species to be used and the rate in terms of pure live seed (PLS)/acre for each species), seeding methods to be employed, and timing (late fall is best time to seed). Attached is a recommended seed mix that could be used for your site. If acceptable, please include it in your Notice. (LK)

R647-4-111 - Reclamation Practices

111.1 Public safety & welfare

1.15 Constructing berms/fences above highwalls

Please refer to comments under R647-104-107.1.15. (DJ)

111.6 All slopes regraded to stable configuration

Are there any areas that will require resloping upon mine closure? (DJ)

111.7 Highwalls stabilized at 45 degrees or less

No mention of final highwall slope. Because of the nature of blasted rock, scaling the highwall will not provide the long-term stabilization necessary at closure. (DJ)

111.8 All roads & pads reclaimed

Reclamation of the access roads constructed in Areas 1 & 3 should be included as a part of the plan. (DJ)

111.12 Topsoil redistribution

Please refer to previous comments under R647-4-106.6 and 110.5. (LK)

R647-4-112 - Variance

No variances requested.

R647-4-113 - Surety

The Division is unable to calculate or confirm reclamation surety costs until all items requested in this review are received. A sample surety calculation form is included for your use. (DJ)

Attachments: Seedmix
 Surety calculation form

Recommended Revegetation Species List
for

McFarland & Hullinger
SiO₂ Mine
M/045/046

Prepared by DOGM March 3, 2000

<u>Common Name</u>	<u>Species Name</u>	<u>*Rate lbs/ac (PLS)</u>
'Hycrest' crested wheatgrass	<u><i>Agropyron cristatum</i> 'Hycrest'</u>	0.5
Intermediate wheatgrass	<u><i>Agropyron intermedium</i></u>	1.5
'Piute' Orchard Grass	<u><i>Dactylis glomerata</i> 'Piute'</u>	0.5
Basin Wildrye	<u><i>Elymus cinereus</i></u>	2.0
Indian ricegrass	<u><i>Oryzopsis hymenoides</i></u>	2.0
Ladac Alfalfa	<u><i>Medicago sativa</i></u>	1.0
Yellow sweetclover	<u><i>Melilotus officinalis</i></u>	0.5
Palmer penstemon	<u><i>Penstemon palmeri</i></u>	0.5
Small burnet	<u><i>Sanguisorba minor</i></u>	1.0
Wyoming big sagebrush	<u><i>Artemisia tridentata wyoming ensis</i></u>	0.1
4-Wing Saltbush	<u><i>Atriplex canescens</i></u>	1.0
Rubber rabbitbrush	<u><i>Chrysothamnus nauseosus</i></u>	0.4
Forage kochia	<u><i>Kochia prostrata</i></u>	0.5
Total		11.5 lbs/ac

***This the recommended broadcast seeding rate.**

RECLAMATION SURETY ESTIMATE

Operator Name

Mine Name

DOGM file number

County

Prepared by Utah State Division of Oil, Gas & Mining

-This estimate uses a D8 size dozer for most earthwork

Print block named "d8est" for the estimate page & "d8notes" for the notes page

Note: actual unit costs may vary according to site conditions last unit cost update 08/25/99

-Amount of disturbed area which will receive reclamation treatments = 0.0 acres

-Estimated total disturbed area for this mine = 0.0 acres

Activity	Quantity	Units	\$/unit	\$	Note
	0	sum	200	0	(1)
Safety gates, signs, etc. (mtls & installation)					
	0	CF	0.25	0	(2)
Demolition of buildings & facilities	0	trips	48	0	(3)
Debris & equipment removal - trucking	0	ton	55	0	(4)
Debris & equipment removal - dump fees	0	hours	176	0	(5)
Debris & equipment removal - loading trucks w/FE loads	0	hours	15	0	(6)
Demolition & debris removal - general labor	0.0	acre	470	0	(7)
Regrading facilities areas (1 ft depth)					
	0	CY	0.47	0	(8)
Regrading waste dump slopes	0.0	acre	220	0	(9)
Ripping waste dump tops					
	0.0	acre	220	0	(9)
Ripping stockpile & compacted areas					
	0.0	acre	220	0	(9)
Ripping pit floors	0.0	acre	220	0	(9)
Ripping pit access roads	0	LF	0.15	0	(10)
Creating safety berms or barriers around highwalls					
	0.0	acre	220	0	(9)
Ripping access roads - dozer	0.0	acre	470	0	(7)
Regrading access roads - dozer	0	LF	0.85	0	(11)
Sidecast mtl replacement on steep roads- trackhoe	0	LF	0.15	0	(10)
Surface drainage restoration or construction					
	0	CY	0.47	0	(12)
Topsoil replacement - dozer	0	CY	1.05	0	(13)
Topsoil replacement - scraper	0	CY	2.55	0	(14)
Topsoil replacement - truck & FE loader					
	0.0	acre	160	0	(00)
Mulching (2 ton/acre alfalfa)	0.0	acre	90	0	(00)
Fertilizing (100 lb/acre diammonium phosphate)	0.0	acre	300	0	(00)
Composted manure (10 ton/acre)	0.0	acre	170	0	(00)
Broadcast seeding (~20 lb/acre)	0.0	acre	150	0	(00)
Drill seeding (~13 lb/acre)	0.0	acre	800	0	(00)
Hydroseeding					
	0.0	acre	50	0	(00)
General site cleanup & trash removal					
	0	equip	1000	0	(00)
Equipment mobilization					
	0	days	372	0	(15)
Reclamation Supervision		Subtotal		0	
				0	
10% Contingency		Subtotal		\$0	
				0	
Escalate for 5 years at 3.27% per yr		Total		\$0	
				\$0	
Rounded surety amount in yr 2004-\$					
Average cost per disturbed acre =					ERR

GENERIC RECLAMATION ESTIMATE

(o:/data/bond/mine-bnd.wb2)

insert mine company name here

last revision

10/12/98

insert mine name here

filename M000-000.WB2

page "estimate D10"

M/000/000

insert county name

Prepared by Utah State Division of Oil, Gas & Mining

last unit cost update

10/12/98

Note

- (1) DOGM lump sum assumed
- (2) Means Heavy Construction Cost Data 1998, 020-604-0100, mix of bldg. types, avg., excluding dump fees
- (3) Means 1998, 020-620-5100, \$0.48/mile for >8CY truck; assumed 100 miles round trip
- (4) Means 1998, 020-612-0100, dump charges, typical urban city, tipping fees only, bldg construction mtl's
- (5) Rental Rate Blue Book 4/98, Cat 988B, 7CY, & Means 1998, Crew B-10U
- (6) DOGM assumed wage for unskilled general labor
- (7) Means 1998 & Blue Book 4/98: Cat D10N, U, mtl 2550 lb/CY, 50 ft push, 1 ft depth
- (8) Means 1998 & Blue Book 4/98: Cat D10N, U, mtl 2550 lb/CY, 100 ft push
- (9) Means 1998 & Blue Book 4/98: Cat D10N, U, multi shank rippers, speed 1.0 mph
- (9) Means 1998 & Blue Book 4/98: Cat D10N, U, multi shank rippers, speed 1.0 mph
- (9) Means 1998 & Blue Book 4/98: Cat D10N, U, multi shank rippers, speed 1.0 mph
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- (9) Means 1998 & Blue Book 4/98: Cat D10N, U, multi shank rippers, speed 1.0 mph
- (10) Means 1998 & Blue Book 4/98: Cat D10N, U, mtl 2550 lb/CY, 50 ft push, avg vol 0.5CY/LF-berm assumed
- (9) Means 1998 & Rental Rate Blue Book 4/98: Cat D10N, U, multi shank rippers, speed 1.0 mph
- (7) Means 1998 & Rental Rate Blue Book 4/98: Cat D10N, U, mtl 2550 lb/CY, 75 ft push, 1 ft depth
- (11) Contractor's actual costs, 1991 at E/053/012, Cat 225 Excavator, 20 ft wide road
- (10) Means 1998 & Blue Book 4/98: Cat D10N, U, mtl 2550 lb/CY, 50 ft push, avg vol 0.5CY/LF-berm assumed
- (12) Means 1998 & Blue Book 4/98: Cat D10N, U, mtl 2550 lb/CY, 100 ft push
- (13) Means 1998 & Blue Book 4/98: Cat 627F P-P, mtl 2550 lb/CY, 2,000 ft haul one-way, grade +/- 4%,
- (14) Means 1998 022-266-2030: hauling excavated or borrow material, off highway hauler, 22 CY, 1 mile round trip
- (00) DOGM general estimate - mulching
- (00) DOGM general estimate - fertilizing
- (00) DOGM general estimate - manure \$16/ton delivered, \$14 ton/acre spreading
- (00) DOGM general estimate - broadcast seeding
- (00) DOGM general estimate - drill seeding
- (00) DOGM general estimate - hydroseeding
- (00) DOGM general estimate - site cleanup & trash removal
- (00) DOGM general estimate - equipment mobilization
- (15) Means 1998, 010-036-0180, project manager, minimum \$1,815/wk

RECLAMATION SURETY ESTIMATE

Operator Name

Mine Name

DOGM file number

Prepared by Utah State Division of Oil, Gas & Mining

(o:/data/bonding/mine-bnd.wb2)

last revision 10/12/98

filename M000-000.WB2

page "estimate D9"

County

-This estimate uses a D9 size dozer for most earthwork

Print block named "d9est" for the estimate page & "d9notes" for the notes page

Note: actual unit costs may vary according to site conditions last unit cost update 10/12/98

-Amount of disturbed area which will receive reclamation treatments = 0.0 acres

-Estimated total disturbed area for this mine = 0.0 acres

Activity	Quantity	Units	\$/unit	\$	Note
Safety gates, signs, etc. (mtls & installation)	0	sum	200	0	(1)
Demolition of buildings & facilities	0	CF	0.25	0	(2)
Debris & equipment removal - trucking	0	trips	48	0	(3)
Debris & equipment removal - dump fees	0	ton	55	0	(4)
Debris & equipment removal - loading trucks w/FE loader	0	hours	176	0	(5)
Demolition & debris removal - general labor	0	hours	15	0	(6)
Regrading facilities areas	0.0	acre	337	0	(7)
Regrading waste dump slopes	0	CY	0.33	0	(8)
Ripping waste dump tops	0.0	acre	250	0	(9)
Ripping stockpile & compacted areas	0.0	acre	250	0	(9)
Ripping pit floors	0.0	acre	250	0	(9)
Ripping pit access roads	0	LF	0.11	0	(10)
Creating safety berms or barriers around highwalls	0.0	acre	250	0	(9)
Ripping access roads - dozer	0.0	acre	337	0	(7)
Regrading access roads - dozer	0	LF	0.85	0	(11)
Sidecast mtl replacement on steep roads- trackhoe	0	LF	0.11	0	(10)
Surface drainage restoration or construction	0	CY	0.33	0	(12)
Topsoil replacement - dozer	0	CY	1.05	0	(13)
Topsoil replacement - scraper	0	CY	2.55	0	(14)
Topsoil replacement - truck & FE loader	0.0	acre	160	0	(00)
Mulching (2 ton/acre alfalfa)	0.0	acre	90	0	(00)
Fertilizing (100 lb/acre diammonium phosphate)	0.0	acre	300	0	(00)
Composted manure	0.0	acre	170	0	(00)
Broadcast seeding (~20 lb/acre)	0.0	acre	150	0	(00)
Drill seeding (~13 lb/acre)	0.0	acre	800	0	(00)
Hydroseeding	0.0	acre	50	0	(00)
General site cleanup & trash removal	0	equip	1000	0	(00)
Equipment mobilization	0	days	372	0	(15)
Reclamation Supervision		Subtotal		0	
10% Contingency		Subtotal		\$0	
Escalate for 5 years at 3.27% per yr		Total		\$0	
Rounded surety amount in yr 2004-\$				\$0	
Average cost per disturbed acre =				ERR	

GENERIC RECLAMATION ESTIMATE

(o:/data/bond/mine-bnd.wb2)

insert mine company name here

last revision

10/12/98*insert mine name here*

filename M000-000.WB2

page "estimate D9"

*M/000/000**insert county name*

Prepared by Utah State Division of Oil, Gas & Mining

*last unit cost update*10/12/98**Note**

- (1) DOGM lump sum assumed
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- (5) Rental Rate Blue Book 4/98, Cat 988B, 7CY, & Means 1998, Crew B-10U, loading trucks only
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- (7) Means 1998 & Blue Book 4/98: Cat D9N, U, mtl 2550 lb/CY, 50 ft push, 1 ft depth
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- (9) Means 1998 & Blue Book 4/98: Cat D9N, U, multi shank rippers, speed 1.0 mph
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- (13) Means 1998 & Blue Book 4/98: Cat 627F P-P, mtl 2550 lb/CY, 2,000 ft haul one-way, grade +/- 4%,
- (14) Means 1998 022-266-2030: hauling excavated or borrow material, off highway hauler, 22 CY, 1 mile round trip
- (00) DOGM general estimate - mulching
- (00) DOGM general estimate - fertilizing
- (00) DOGM general estimate - manure \$16/ton delivered, \$14 ton/acre spreading
- (00) DOGM general estimate - broadcast seeding
- (00) DOGM general estimate - drill seeding
- (00) DOGM general estimate - hydroseeding
- (00) DOGM general estimate - site cleanup & trash removal
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- (15) Means 1998, 010-036-0180, project manager, minimum \$1,815/wk

RECLAMATION SURETY ESTIMATE

Operator Name

Mine Name

DOGM file number

County

Prepared by Utah State Division of Oil, Gas & Mining

-This estimate uses a D10 size dozer for most earthwork

Print block named "d10est" for the estimate page & "d10notes" for the notes page

Note: actual unit costs may vary according to site conditions last unit cost update 10/12/98

-Amount of disturbed area which will receive reclamation treatments = 0.0 acres

-Estimated total disturbed area for this mine = 0.0 acres

Activity	Quantity	Units	\$/unit	\$	Note
Safety gates, signs, etc. (mtls & installation)	0	sum	200	0	(1)
Demolition of buildings & facilities	0	CF	0.25	0	(2)
Debris & equipment removal - trucking	0	trips	48	0	(3)
Debris & equipment removal - dump fees	0	CY	55	0	(4)
Debris & equipment removal - loading trucks w/FE loader	0	hours	176	0	(5)
Demolition & debris removal - general labor	0	hours	15	0	(6)
Regrading facilities areas	0.0	acre	306	0	(7)
Regrading waste dump slopes	0	CY	0.31	0	(8)
Ripping waste dump tops	0.0	acre	291	0	(9)
Ripping stockpile & compacted areas	0.0	acre	291	0	(9)
Ripping pit floors	0.0	acre	291	0	(9)
Ripping pit access roads	0.0	acre	291	0	(9)
Creating safety berms or barriers around highwalls	0	LF	0.10	0	(10)
Ripping access roads - dozer	0.0	acre	291	0	(9)
Regrading access roads - dozer	0.0	acre	411	0	(7)
Sidecast mtl replacement on steep roads- trackhoe	0	LF	0.85	0	(11)
Surface drainage restoration or construction	0	LF	0.10	0	(10)
Topsoil replacement - dozer	0	CY	0.31	0	(12)
Topsoil replacement - scraper	0	CY	1.05	0	(13)
Topsoil replacement - truck & FE loader	0	CY	2.55	0	(14)
Mulching (2 ton/acre alfalfa)	0.0	acre	160	0	(00)
Fertilizing (100 lb/acre diammonium phosphate)	0.0	acre	90	0	(00)
Composted manure (10 ton/acre)	0.0	acre	300	0	(00)
Broadcast seeding (~20 lb/acre)	0.0	acre	170	0	(00)
Drill seeding (~13 lb/acre)	0.0	acre	150	0	(00)
Hydroseeding	0.0	acre	800	0	(00)
General site cleanup & trash removal	0.0	acre	50	0	(00)
Equipment mobilization	0	equip	1000	0	(00)
Reclamation Supervision	0	days	372	0	(15)
Subtotal				0	
10% Contingency				0	
Subtotal				\$0	
Escalate for 5 years at 3.27% per yr				0	
Total				\$0	
Rounded surety amount in yr 2004-\$				\$0	
Average cost per disturbed acre =				ERR	

GENERIC RECLAMATION ESTIMATE

(o:/data/bond/mine-bnd.wb2)

insert mine company name here

last revision

12/01/97

insert mine name here

filename M000-000.WB2

page "estimate D8"

M/000/000

insert county name

Prepared by Utah State Division of Oil, Gas & Mining

last unit cost update

08/25/99

Note

- (1) DOGM lump sum assumed
- (2) Means Heavy Construction Cost Data 1998, 020-604-0100, mixture of bldg. types, average, excluding dump fees
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- (6) DOGM assumed wage for unskilled general labor
- (7) Means 1998 & Rental Rate Blue Book 4/98: Cat D8N, U, mtl 2550 lb/CY, 50 ft push, 1 ft depth
- (8) Means 1998 & Rental Rate Blue Book 4/98: Cat D8N, U, mtl 2550 lb/CY, 100 ft push
- (9) Means 1998 & Rental Rate Blue Book 4/98: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (9) Means 1998 & Rental Rate Blue Book 4/98: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (9) Means 1998 & Rental Rate Blue Book 4/98: Cat D8N, U, multi shank rippers, speed 1.0 mph
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- (10) Means 1998 & Rental Rate Blue Book 4/98: Cat D8N, U, mtl 2550 lb/CY, 50 ft push, avg vol 0.5CY/LF-berm assumed
- (12) Means 1998 & Rental Rate Blue Book 4/98: Cat D8N, U, mtl 2550 lb/CY, 100 ft push
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- (15) Means 1998, 010-036-0180, project manager, minimum \$1,815/wk